

SUPERCONDUCTING SINGLE PHOTON DETECTOR

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ABSTRACT OF THE DISCLOSURE

A single photon detector includes a superconductor strip biased near its critical current. The
15 superconductor strip provides a discernible output signal upon absorption of a single incident photon. In one example, the superconductor is a strip of NbN (niobium nitride). In another example, the superconductor strip meanders to increase its
20 probability of receiving a photon from a light source. The single-photon detector is suitable for a variety of applications including free-space and satellite communications, quantum communications, quantum cryptography, weak luminescence, and semiconductor
25 device testing.